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TITLE: SPOT JOINING METHOD, SPOT JOINING
APPARATUS AND JOINED MATERIALS
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ABSTRACT:

PROBLEM TO BE SOLVED: To provide a spot joining apparatus, with which reduction in plate thickness caused by a recess due to a pin unavoidably developed with spot joining using friction stir is compensated, and to provide a spot joining method and joined materials.

SOLUTION: A friction stir welding equipment 1 pushes the pin 8 against a joining point in two piled-up sheets of works W1, W2 while rotating a joining tool 7 having the pin 8 projecting from the tip thereof.

Thus, the pin 8 is inserted into the joining point with the friction heat and a base metal is stirred with the rotation to induce plastic fluid. After stirring for a prescribed time, the joining is performed in the plastic fluid zone by pulling out the pin 8 to form the recess 16 due to the pin at the joining point. In the recess 16, thermosetting synthetic resin 17 is filled and hardened. The hardened resin 17 is integrated with the base metal and the shortage of strength caused by the locally reduced thickness is compensated.

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